

Notice of Allowability

Application No.

10/059,233

Examiner

Kuen S. Lu

Applicant(s)

NGO ET AL.

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/8/2005.
2. ☒ The allowed claim(s) is/are 1,6-110,113,114 and 116-125.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>#1: 11/22/2005</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 1, 2005 has been entered.
2. After a thorough search and examination of the present application, and in light of the prior art made of record and Applicant's response of September 8, 2005, Claims **1, 6-110, 113-114 and 116-126** are allowed.

Examiner's Amendments

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee. Authorization for this Examiner's amendment, listed below, was given in a telephone interview with Mr. James A. LaBarre (Registration #: 28,632), on November 22, 2005. A copy of the interview summary is attached.

AMENDMENTS TO THE CLAIMS:

16. (Currently Amended) The method of claim ~~15~~ 1 wherein ~~an~~ the atom graph in the store at a given device has plural cursors which identify at least two

different respective atoms in the graph as a result of an update, and further including the step of presenting a view of each version of the data object represented by the respective identified atoms for conflict resolution.

67. (Currently Amended) The method of claim [[4]] 1 wherein said updating step comprises the transmission of information pertaining to atoms from a sender store to a receiver store.

95. (Currently Amended) The method of claim 94 wherein an the atom graph at each store has a cursor that identifies an atom pertaining to a current version of the data object.

106. (Currently Amended) The method of claim [[5]] 1 wherein each of said parent atom and said descendant atoms contains a complete set of data for the version of the data object to which the atom pertains.

107. (Currently Amended) The method of claim [[5]] 1 wherein a parent atom contains a complete set of data for the version of the data object to which the atom pertains, and descendant atoms contain information regarding differences between said complete set and the respective versions of the data object to which they pertain.

108. (Currently Amended) The method of claim [[5]] 1 wherein a descendant atom contains a complete set of data for the version of the data object to which the atom pertains, and a parent atom contains information regarding differences between said complete set and the version of the data object to which said parent atom pertains.

Reason for Allowable

4. In the Examiner's Office Action for non-Final Rejection of May 13, 2005, 35 U.S.C. 35 U.S.C. § 103, rejection was based on the primary reference, U.S. Patent 6,615,223 B1, Shih et al., "METHOD AND SYSTEM FOR DATA REPLICATION", issued on September 2, 2003 (hereafter "Shih") and the secondary reference, U.S. Patent Application Publication 2003/0126391 A1, Neufeld et al. "METHOD TO INCREASE THE LIFE SPAN OF LIMITED CYCLE READ/WRITE MEDIA", published on July 3, 2003 (hereafter "Ottesen").

In the Remarks filed on September 8, 2005, the Applicant agreed that the tree structure of LDAP structure has the same structure as graph tree, however, the Applicant argued that the contents of the two structures are distinct from each other. Concerning the subject matter constituting a graph of atoms that represent the history of a data object which the Applicant claimed, the Examiner agreed that the references cited, either by themselves or in combination with other references, do not fairly or specifically teach.

A further review of search results conducted over the past year and the Applicant's most currently amended claims with the Examiner's Amendments, and consideration of the above remarks, the Examiner is convinced that the prior art made of record does not

teach the following combined subject matter of every independent claims 1, 109 and 114:

Using tree of atoms (atoms graph) to represent both operation history and content of a data object and, updating the tree when an operation is perform on an atom. The tree of atoms is replicated to other devices by transmitting the updated atom and applying mathematical union operation to the graphs of atoms.

A search for the prior art on EAST database has been recently conducted to further extend and update the scope the searches conducted during the past one and half years on domains (EAST, NPL-ACM, Google, NPL-IEEE, Oracle, Sun Micro, etc.). The prior arts searched and investigated in domains (EAST, NPL-ACM, Google, NPL-IEEE, Oracle, Sun Micro, etc) do not fairly teach or suggest the teaching of the combined elements as claimed in the independent claims 1, 109 and 114.

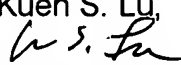
The dependent Claims **(6-108 and 126), (110, 113 and 125) and (116-124)**, depending claims **1, 109 and 114**, respectively, also distinct from the prior art for the same reason.

5. Any comments considered necessary by Applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".


Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S. Lu whose telephone number is (571) 272-4114. The examiner can normally be reached on Monday-Friday (8:30 am-5:30 pm). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean R. Homere, Esq. can be reached on (571) 272-3780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for Page 13 published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 886-217-9197 (toll-free).

Kuen S. Lu,

Patent Examiner,

November 23, 2005


JEAN R. HOMERE
SUPERVISOR